

Appl. No. 10/049,569
Amdt. dated November 29, 2004
Reply to Office Action of, May 27, 2004

REMARKS

Support for Claim 12 can be found in the specification, e.g., Page 9, lines 31-37.

3) Applicants will amend the specification in due course when allowable subject matter is indicated.

4)-5). The objection to Claims 6 and 7 was not understood these claims are directed to different classes of subject matter, and therefore do not appear to be duplicative of other claims. These claims were amended for reasons of clarity, however, and such amendment do not change the scope of the claim.

Claim 8 was amended in the Preliminary amendment filed February 15, 2002 to eliminate the multiple dependency. Therefore, it should not have been withdrawn from consideration. It is currently amended to clarify it. These amendments do not change its scope in any way.

6)-8). The polynucleotides and polypeptides of the present invention can be used as reagents for the detection of gene expression. Such expression has been identified in various organs and tissues, including human brain, kidney, blood, lung, colon, lymph nodes, liver and placenta. See, e.g., Specification, Page 15, lines 29-30. Detection can be performed directly on these tissues, as well as on other specimens, including, urine, biopsy tissue, or autopsy material. See, e.g., Specification, Page 12, lines 23-31. Antibodies to the claimed proteins can be used for a variety of purposes, including for detecting expression in normal and disease states, and as a general marker, e.g., in toxicology experiments to determine whether expression is perturbed by a potentially toxic agent.

Most recent published work by Kilk et al. (Neuropeptides. 2004 Oct; 38(5):316-24), indicates that human galanin receptor type 1 (GalR1) mRNA has been used to optimize antisense

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efficacy and Kofler et al. demonstrate the expression of neuropeptide galanin and galanin receptors in human skin (J Invest Dermatol. 2004 April; 122(4): 1050-3). Page 8, lines 12-15 of the present specification indicates that PGPCR-3 protein is homologous to human galanin receptor.

PGPCR-3 was subsequently re-named GPR-78, and has a separate entry in the On-line Mendelian inheritance in Man (OMIM). Thus, the scientific community generally recognizes it as a useful gene. See Exhibit A. (The attached BLAST search shows 100% identity to SEQ ID NO:2 and GPR-78).

Thus, the Examiner's objections with respect to a lack of utility are not justified.

9). The claims have amended to address the alleged indefiniteness. These amendments do not change the scope of the claims in any way, but merely clarify them.

In view of the above remarks, favorable reconsideration is courteously requested. If there are any remaining issues which could be expedited by a telephone conference, the Examiner is courteously invited to telephone counsel at the number indicated below.

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The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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Attorney for Applicant(s)

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Attorney Docket No.: MERCK-2378

Date: November 29, 2004

OMIM
Online Mendelian Inheritance in Man

PubMed Nucleotide Protein Genome Structure PMC Taxonomy OMIM

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***606921**

Links

G PROTEIN-COUPLED RECEPTOR 78; GPR78

Gene map locus [Chr.4](#)

TEXT

DESCRIPTION

G protein-coupled receptors (GPCRs, or GPRs) contain 7 transmembrane domains and transduce extracellular signals through heterotrimeric G proteins.

CLONING

Lee et al. (2001) identified GPR78 in a genomic database using the sequence of GPR26 (604847) as query. PCR primers were designed to amplify GPR78 from a genomic library, and overlapping fragments of partial sequences were joined to obtain the full-length cDNA. GPR78 encodes a deduced 363-amino acid protein that shares 56% sequence identity with GPR26 in the transmembrane region. Northern blot analysis revealed a 1.1-kb transcript in pituitary, and 1.1- and 4.2-kb transcripts in placenta. No expression was detected in brain, skeletal muscle, lung, heart, liver, pancreas, or kidney.



GENE FUNCTION

Van Laar et al. (2000) determined that GPR78 expression increased in fibroblasts or HeLa cells following UV-A irradiation, exposure to DNA-alkylating agents, or endoplasmic reticulum (ER) stress caused by osmotic shock or the glycosylation inhibitor tunicamycin. The response depended upon the cell line studied. UV-B was a weaker inducer, and UV-C and several other DNA-damaging agents did not induce GPR78 expression. Induction of GPR78 by tunicamycin required activation of multiple ER stress-response elements in the promoter of the GPR78 gene, and induction by a DNA-alkylating agent was independent of the unfolded protein response.



MAPPING

Lee et al. (2001) mapped the GPR78 gene to chromosome 4 based on sequence similarity between the GPR78 sequence and a genomic clone (GenBank AC007104) localized to chromosome 4.

REFERENCES

1. Lee, D. K.; Nguyen, T.; Lynch, K. R.; Cheng, R.; Vanti, W. B.; Arkhitko, O.; Lewis, T.; Evans, J. F.; George, S. R.; O'Dowd, B. F. :

Discovery and mapping of ten novel G protein-coupled receptor genes. *Gene* 275: 83-91, 2001.

PubMed ID : [11574155](#)

2. van Laar, T.; Schouten, T.; Hoogervorst, E.; van Eck, M.; van der Eb, A. J.; Terleth, C. :
The novel MMS-inducible gene Mif1/KIAA0025 is a target of the unfolded protein response pathway. *FEBS Lett.* 469: 123-131, 2000.

PubMed ID : [10708769](#)

CONTRIBUTORS

Patricia A. Hartz - updated : 9/2/2003

CREATION DATE

Patricia A. Hartz : 5/9/2002

EDIT HISTORY

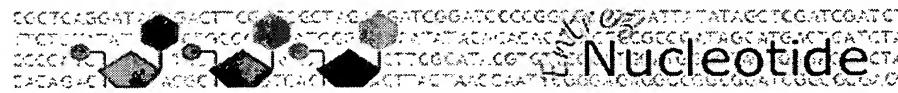
mgross : 9/2/2003

carol : 5/9/2002

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1: NM_080819. Reports Homo sapiens G pr...[gi:36951033]

LOCUS NM_080819 1955 bp mRNA linear PRI 23-AUG-2004
DEFINITION Homo sapiens G protein-coupled receptor 78 (GPR78), mRNA.
ACCESSION NM_080819
VERSION NM_080819.2 GI:36951033
KEYWORDS.
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 1955)
AUTHORS Clark,H.F., Gurney,A.L., Abaya,E., Baker,K., Baldwin,D., Brush,J.,
Chen,J., Chow,B., Chui,C., Crowley,C., Currell,B., Deuel,B.,
Dowd,P., Eaton,D., Foster,J., Grimaldi,C., Gu,Q., Hass,P.E.,
Heldens,S., Huang,A., Kim,H.S., Klimowski,L., Jin,Y., Johnson,S.,
Lee,J., Lewis,L., Liao,D., Mark,M., Robbie,E., Sanchez,C.,
Schoenfeld,J., Seshagiri,S., Simmons,L., Singh,J., Smith,V.,
Stinson,J., Vagts,A., Vandlen,R., Watanabe,C., Wieand,D., Woods,K.,
Xie,M.H., Yansura,D., Yi,S., Yu,G., Yuan,J., Zhang,M., Zhang,Z.,
Goddard,A., Wood,W.I., Godowski,P. and Gray,A.
TITLE The secreted protein discovery initiative (SPDI), a large-scale
effort to identify novel human secreted and transmembrane proteins:
a bioinformatics assessment
JOURNAL Genome Res. 13 (10), 2265-2270 (2003)
PUBMED 12975309
REFERENCE 2 (bases 1 to 1955)
AUTHORS Lee,D.K., Nguyen,T., Lynch,K.R., Cheng,R., Vanti,W.B., Arkhitko,O.,
Lewis,T., Evans,J.F., George,S.R. and O'Dowd,B.F.
TITLE Discovery and mapping of ten novel G protein-coupled receptor genes
JOURNAL Gene 275 (1), 83-91 (2001)
PUBMED 11574155
COMMENT **VALIDATED REFSEQ:** This record has undergone preliminary review of
the sequence, but has not yet been subject to final review. The
reference sequence was derived from AK128807.1 and BC057778.1.
On Sep 29, 2003 this sequence version replaced gi:18201873.

Summary: G protein-coupled receptors (GPCRs, or GPRs) contain 7
transmembrane domains and transduce extracellular signals through
heterotrimeric G proteins. [supplied by OMIM].
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ORIGIN

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1: [NP_543009](#). Reports G protein-coupled...[gi:36951034]

BLink, Domains, Links

LOCUS NP_543009 363 aa linear PRI 23-AUG-2004

DEFINITION G protein-coupled receptor 78 [Homo sapiens].

ACCESSION NP_543009

VERSION NP_543009.2 GI:36951034

DBSOURCE REFSEQ: accession NM_080819.2

KEYWORDS .

SOURCE Homo sapiens (human)

ORGANISM Homo sapiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

REFERENCE 1 (residues 1 to 363)

AUTHORS Clark,H.F., Gurney,A.L., Abaya,E., Baker,K., Baldwin,D., Brush,J., Chen,J., Chow,B., Chui,C., Crowley,C., Currell,B., Deuel,B., Dowd,P., Eaton,D., Foster,J., Grimaldi,C., Gu,Q., Hass,P.E., Heldens,S., Huang,A., Kim,H.S., Klimowski,L., Jin,Y., Johnson,S., Lee,J., Lewis,L., Liao,D., Mark,M., Robbie,E., Sanchez,C., Schoenfeld,J., Seshagiri,S., Simmons,L., Singh,J., Smith,V., Stinson,J., Vagts,A., Vandlen,R., Watanabe,C., Wieand,D., Woods,K., Xie,M.H., Yansura,D., Yi,S., Yu,G., Yuan,J., Zhang,M., Zhang,Z., Goddard,A., Wood,W.I., Godowski,P. and Gray,A.

TITLE The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment

JOURNAL Genome Res. 13 (10), 2265-2270 (2003)

PUBMED 12975309

REFERENCE 2 (residues 1 to 363)

AUTHORS Lee,D.K., Nguyen,T., Lynch,K.R., Cheng,R., Vanti,W.B., Arkhitko,O., Lewis,T., Evans,J.F., George,S.R. and O'Dowd,B.F.

TITLE Discovery and mapping of ten novel G protein-coupled receptor genes

JOURNAL Gene 275 (1), 83-91 (2001)

PUBMED 11574155

COMMENT VALIDATED REFSEQ: This record has undergone preliminary review of the sequence, but has not yet been subject to final review. The reference sequence was derived from AK128807.1 and BC057778.1. On Sep 29, 2003 this sequence version replaced gi:18201874.

Summary: G protein-coupled receptors (GPCRs, or GPRs) contain 7 transmembrane domains and transduce extracellular signals through heterotrimeric G proteins. [supplied by OMIM].

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results of BLAST

BLASTP 2.2.10 [Oct-19-2004]

Reference:

Altschul, Stephen F., Thomas L. Madden, Alejandro A. Schäffer, Jinghui Zhang, Zheng Zhang, Webb Miller, and David J. Lipman (1997), "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs", Nucleic Acids Res. 25:3389-3402.

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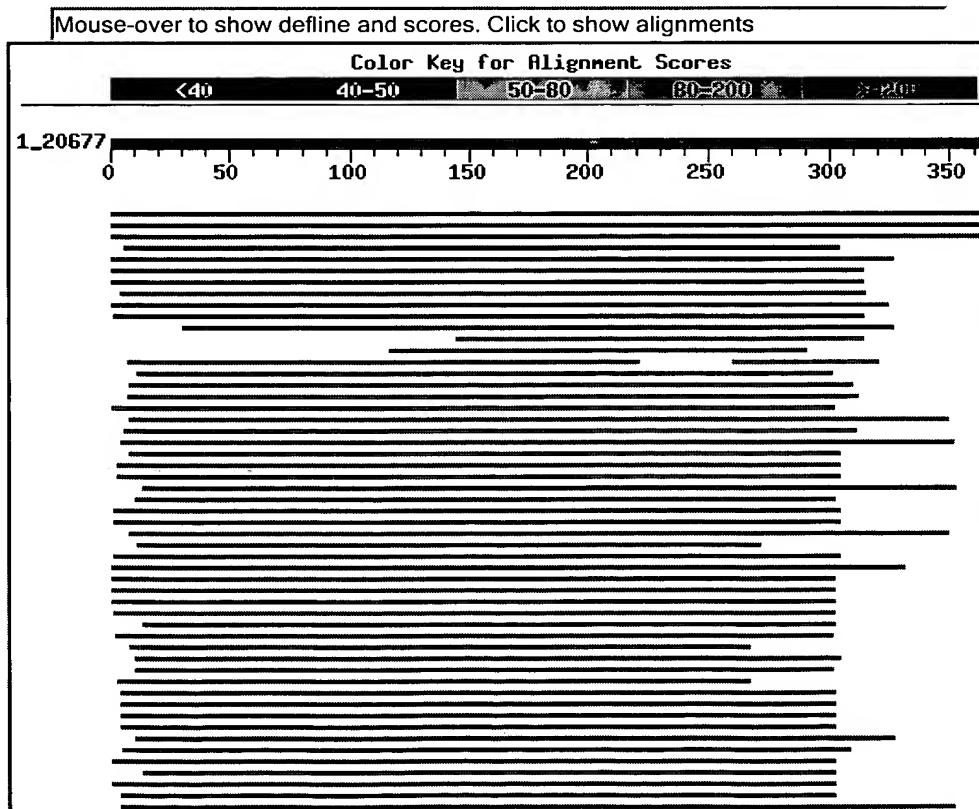
(363 letters)

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2,183,111 sequences; 740,385,392 total letters

If you have any problems or questions with the results of this search please refer to the [BLAST FAQs](#)

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Distribution of 514 Blast Hits on the Query Sequence



Sequences producing significant alignments:

Score (bits)	E Value
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gi 23592220 ref NP_703143.1	G protein-coupled receptor 26 ...	330	5e-89	
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gi 47214058 emb CAG00716.1	unnamed protein product [Tetrao...]	188	2e-46	
gi 47215666 emb CAG04750.1	unnamed protein product [Tetrao...]	95	2e-18	
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gi 11321563 ref NP_000861.1	5-hydroxytryptamine (serotonin) receptor 5 [Mus musculus]	81	5e-14	
gi 41282074 ref NP_955525.1	5-hydroxytryptamine (serotonin) receptor 5 [Mus musculus]	81	5e-14	
gi 3326989 emb CAA73108.1	5-HT4 receptor [Homo sapiens]	81	5e-14	
gi 3326991 emb CAA73109.1	5-HT4 receptor [Homo sapiens]	81	5e-14	
gi 12274906 emb CAC22251.1	5-hydroxytryptamine4 receptor [Mus musculus]	81	5e-14	
gi 40643226 emb CAC79538.1	serotonin receptor 5-HT4 [Homo sapiens]	81	5e-14	
gi 1518034 gb AAC60067.1	dopamine D1A1 receptor [Mus musculus]	81	5e-14	
gi 3962388 emb CAA06536.1	dopamine D1/beta receptor [Brachydanio rerio]	81	5e-14	
gi 26005719 emb CAD58392.1	5-hydroxytryptamine 4 receptor [Mus musculus]	81	5e-14	
gi 50757971 ref XP_425384.1	PREDICTED: similar to Somatostatin receptor 1 [Mus musculus]	80	6e-14	
gi 6900062 emb CAB71316.1	5-HT4 receptor [Homo sapiens]	80	6e-14	
gi 47222737 emb CAG01704.1	unnamed protein product [Tetraodon nigroviridis]	80	6e-14	
gi 6981584 ref NP_036851.1	somatostatin receptor 1 [Rattus norvegicus]	80	8e-14	
gi 55640843 ref XP_522831.1	PREDICTED: somatostatin receptor 1 [Mus musculus]	80	8e-14	
gi 54696710 gb AAV38727.1	somatostatin receptor 1 [synthetic]	80	8e-14	
gi 6678037 ref NP_033242.1	somatostatin receptor 1 [Mus musculus]	80	8e-14	
gi 6446422 gb AAF08614.1	somatostatin receptor type 1 subunit [Mus musculus]	80	8e-14	
gi 4503391 ref NP_000789.1	dopamine receptor D5 [Homo sapiens]	80	1e-13	
gi 2340853 emb CAA74970.1	D1A3 Dopamine receptor [Cyprinus carpio]	80	1e-13	
gi 89048 pir A39008 histamine H2 receptor - dog >gi 163952 pir A39008 histamine H2 receptor - dog	>gi 163952 pir A39008 histamine H2 receptor - dog	79	1e-13	
gi 29570499 gb AAO91738.1	Dopamine receptor protein 1, isoform 1 [Danio rerio]	79	1e-13	
gi 29570498 gb AAO91737.1	Dopamine receptor protein 1, isoform 1 [Danio rerio]	79	1e-13	
gi 22658483 gb AAN01276.1	dopamine receptor D5 [Homo sapiens]	79	1e-13	
gi 3941551 gb AAC82383.1	putative odorant receptor LOR14 [Mus musculus]	79	1e-13	
gi 47228936 emb CAG09451.1	unnamed protein product [Tetraodon nigroviridis]	79	1e-13	
gi 14336736 gb AAK61266.1	somatostatin receptor type 5 [Mus musculus]	79	2e-13	
gi 4557865 ref NP_001044.1	somatostatin receptor 5 [Homo sapiens]	79	2e-13	
gi 2119491 pir I51659 dopamine D1A receptor - African clawed frog	>gi 2119491 pir I51659 dopamine D1A receptor - African clawed frog	79	2e-13	
gi 2136182 pir I57955 somatostatin receptor - human	>gi 4336182 pir I57955 somatostatin receptor - human	79	2e-13	
gi 55643121 ref XP_510725.1	PREDICTED: somatostatin receptor 5 [Mus musculus]	79	2e-13	
gi 49115095 gb AAH72912.1	MGC80373 protein [Xenopus laevis]	79	2e-13	
gi 47219262 emb CAG11724.1	unnamed protein product [Tetraodon nigroviridis]	79	2e-13	
gi 49169818 ref NP_033245.2	somatostatin receptor 4 [Mus musculus]	79	2e-13	
gi 6754260 ref NP_034613.1	5-hydroxytryptamine (serotonin) receptor 4 [Mus musculus]	79	2e-13	
gi 6981586 ref NP_037168.1	somatostatin receptor 4 [Rattus norvegicus]	79	2e-13	
gi 31204165 ref XP_311031.1	ENSANGP00000020010 [Anopheles gambiae]	79	2e-13	
gi 31560584 ref NP_034384.2	galanin receptor 2 [Mus musculus]	79	2e-13	
gi 21654945 gb AAL23575.1	putative G-protein coupled receptor 2 [Mus musculus]	79	2e-13	
gi 11225272 ref NP_062221.1	somatostatin receptor 2 [Rattus norvegicus]	78	3e-13	
gi 25990354 gb AAN76495.1	type five somatostatin receptor [Mus musculus]	78	3e-13	
gi 21314570 gb AAM47010.1	histamine receptor H2 [Mus musculus]	78	3e-13	
gi 12860788 dbj BAB32044.1	unnamed protein product [Mus musculus]	78	3e-13	
gi 55645903 ref XP_511653.1	PREDICTED: somatostatin receptor 5 [Mus musculus]	78	4e-13	
gi 9506709 ref NP_062045.1	galanin receptor 2 [Rattus norvegicus]	78	4e-13	
gi 27806653 ref NP_776467.1	dopamine receptor D1 [Bos taurus]	78	4e-13	
gi 50344544 emb CAD59057.1	5-hydroxytryptamine receptor 5A [Mus musculus]	78	4e-13	
gi 11878036 gb AAG40780.1	somatostatin receptor 1 [Sus scrofa]	78	4e-13	
gi 4503905 ref NP_003848.1	galanin receptor 2 [Homo sapiens]	77	5e-13	
gi 54696714 gb AAV38729.1	somatostatin receptor 2 [Homo sapiens]	77	5e-13	
gi 456851 gb AAB29143.1	D1A dopamine receptor; D1A receptor [Mus musculus]	77	5e-13	
gi 543108 pir JC2083 somatostatin receptor 2 - pig	>gi 4643108 pir JC2083 somatostatin receptor 2 - pig	77	5e-13	
gi 13435405 ref NP_071640.1	histamine receptor H2 [Homo sapiens]	77	5e-13	
gi 32493367 gb AAH54510.1	HRH2 protein [Homo sapiens]	77	5e-13	
gi 55625426 ref XP_527128.1	PREDICTED: similar to HRH2 protein [Mus musculus]	77	5e-13	
gi 3642918 gb AAC36589.1	galanin receptor type 2 [Mus musculus]	77	5e-13	

gi 47086925 ref NP_998462.1	zgc:85682 [Danio rerio] >gi 46...	77	5e-13	G
gi 6680275 ref NP_032312.1	histamine receptor H 2 [Mus mus...	77	5e-13	G
gi 50732639 ref XP_425970.1	PREDICTED: similar to 5-hydrox...	77	5e-13	G
gi 3941547 gb AAC82381.1	putative odorant receptor LOR3 [L...	77	5e-13	G
gi 7229404 gb AAF42810.1	somatostatin receptor 2B [Homo sa...	77	5e-13	G
gi 14550544 gb AAH09522.1	Unknown (protein for IMAGE:33547...	77	5e-13	G
gi 49902351 gb AAH74796.1	Orexin receptor 1 [Homo sapiens] ...	77	7e-13	G
gi 1518038 gb AAC60069.1	dopamine D1A2 receptor	77	7e-13	G
gi 39597901 emb CAE68593.1	Hypothetical protein CBG14463 [...	77	7e-13	G
gi 2119500 pir I50475	dopamine D1 receptor - goldfish >gi ...	77	7e-13	G
gi 178896 gb AAA35550.1	beta-3-adrenergic receptor	77	9e-13	G
gi 4557267 ref NP_000016.1	adrenergic, beta-3-, receptor [...	77	9e-13	G
gi 27685697 ref XP_220099.1	similar to putative neurotrans...	77	9e-13	G
gi 55646095 ref XP_523721.1	PREDICTED: similar to galanin ...	77	9e-13	G
gi 54696712 gb AAV38728.1	somatostatin receptor 2 [synthet...	77	9e-13	G
gi 4557637 ref NP_001516.1	orexin receptor 1 [Homo sapiens...]	77	9e-13	G
gi 1070629 pir QRHUB3	beta-3-adrenergic receptor, splice f...	77	9e-13	G
gi 1518036 gb AAC60068.1	dopamine D1C receptor	77	9e-13	G
gi 47218969 emb CAG02007.1	unnamed protein product [Tetrao...	77	9e-13	G
gi 2144868 pir DYRTD1	dopamine receptor D1 - rat	76	1e-12	G
gi 34879477 ref XP_341112.1	5-hydroxytryptamine receptor [...	76	1e-12	G
gi 50754733 ref XP_414481.1	PREDICTED: similar to serotonin...	76	1e-12	G
gi 47216965 emb CAG04907.1	unnamed protein product [Tetrao...	76	1e-12	G
gi 908913 gb AAA70428.1	D1 dopamine receptor protein >gi 1...	76	1e-12	G
gi 20857619 ref XP_136992.1	PREDICTED: similar to Putative...	76	2e-12	G
gi 6981044 ref NP_037097.1	histamine receptor H 2 [Rattus ...	76	2e-12	G
gi 13236497 ref NP_076917.1	5-hydroxytryptamine (serotonin...)	76	2e-12	G
gi 47575845 ref NP_001001267.1	serotonin 4A receptor (5-HT...)	76	2e-12	G
gi 27806153 ref NP_776892.1	somatostatin receptor 2 [Bos t...	76	2e-12	G
gi 50755087 ref XP_425206.1	PREDICTED: similar to dopamine...	76	2e-12	G
gi 6425114 gb AAF08306.1	beta 3 adrenergic receptor [Macac...	76	2e-12	G
gi 45439382 gb AAS18239.2	5-hydroxytryptamine receptor 4 [...	76	2e-12	G
gi 1362718 pir A55886	dopamine receptor D1A - chicken	76	2e-12	G
gi 924639 gb AAC52232.1	5-HT4S receptor >gi 1363262 pir S...	75	2e-12	G
gi 6981060 ref NP_036985.1	5-hydroxytryptamine (serotonin)...	75	2e-12	G
gi 15558894 emb CAC69545.1	somatostatin receptor subtype 1...	75	2e-12	G
gi 4009515 gb AAC95468.1	galanin receptor 2 [Mus musculus]	75	3e-12	G
gi 2136496 pir I47217	dopamine receptor - pig >gi 808098 g...	75	3e-12	G
gi 12643864 sp Q9TT96	B1AR BOVIN Beta-1 adrenergic receptor...	75	3e-12	G
gi 4102061 gb AAD01420.1	somatostatin receptor type 2 [Mus...]	75	3e-12	G
gi 33859542 ref NP_034206.1	dopamine receptor D1A [Mus mus...]	75	3e-12	G
gi 48139558 ref XP_397024.1	similar to allatostatin recept...	75	3e-12	G
gi 4102060 gb AAD01419.1	somatostatin receptor type 2 [Mus...]	75	3e-12	G
gi 47219685 emb CAG12607.1	unnamed protein product [Tetrao...	75	3e-12	G
gi 6678039 ref NP_033243.1	somatostatin receptor 2 [Mus mu...]	74	5e-12	G
gi 55625662 ref XP_527182.1	PREDICTED: dopamine receptor D...	74	5e-12	G
gi 55742138 ref NP_001007122.1	5-hydroxytryptamine (seroto...	74	5e-12	G
gi 6680660 ref NP_031442.1	adrenergic receptor, alpha 1b [...]	74	5e-12	G
gi 1518040 gb AAC60070.1	dopamine D1B receptor	74	5e-12	G
gi 47213581 emb CAF93484.1	unnamed protein product [Tetrao...]	74	5e-12	G
gi 3335678 gb AAC27328.1	D1 dopamine receptor [Macaca mula...]	74	5e-12	G
gi 30399 emb CAA41734.1	D-1 dopamine receptor [Homo sapiens]	74	5e-12	G
gi 1362720 pir C55886	dopamine receptor D1D - chicken	74	5e-12	G
gi 49456799 emb CAG46720.1	DRD1 [Homo sapiens]	74	5e-12	G
gi 346640 pir S28058	serotonin receptor 5 - mouse	74	6e-12	G
gi 3283973 gb AAC25414.1	beta 1 adrenergic receptor [Ovis ...]	74	6e-12	G
gi 50979252 ref NP_001003377.1	beta 3 adrenergic receptor ...	74	6e-12	G
gi 50755831 ref XP_425241.1	PREDICTED: similar to somatost...	74	6e-12	G
gi 28827164 gb AAO24755.1	melanin-concentrating hormone re...	74	6e-12	G
gi 54638423 gb EAL27825.1	GA21941-PA [Drosophila pseudoobs...]	74	6e-12	G
gi 7159252 gb AAF37686.1	octopamine receptor [Aplysia cali...	74	6e-12	G

gi 47223437 emb CAG04298.1	unnamed protein product [Tetrao...	74	6e-12	
gi 2137787 pir JC4629	somatostatin receptor type-4 - mouse...	74	6e-12	G
gi 1913918 gb AAB51068.1	beta-3 adrenergic receptor [Canis...	74	6e-12	
gi 603869 emb CAA57494.1	D1-like dopamine receptor [Oreoch...	74	8e-12	
gi 6978775 ref NP_036678.1	dopamine receptor 1A [Rattus no...	74	8e-12	G
gi 59241891 gb EAA08140.3	ENSANGP00000018804 [Anopheles ga...	74	8e-12	
gi 50950129 ref NP_001002933.1	hypocretin receptor 2 [Canis...	73	1e-11	G
gi 47223876 emb CAG06053.1	unnamed protein product [Tetrao...	73	1e-11	
gi 47217696 emb CAG13327.1	unnamed protein product [Tetrao...	73	1e-11	
gi 47214321 emb CAG11192.1	unnamed protein product [Tetrao...	73	1e-11	
gi 37704009 gb AAR01326.1	orexin receptor type-1 [Mus musc...	73	1e-11	G
gi 31746493 gb AAP68899.1	somatostatin receptor type five...	73	1e-11	
gi 23379643 gb AAM76564.1	adrenergic receptor beta-3 [Pong...	73	1e-11	
gi 46451437 gb AAS97963.1	type 3 somatostatin receptor [As...	73	1e-11	
gi 55665868 emb CAH73407.1	solute carrier family 31 (coupe...	72	2e-11	
gi 28839657 gb AAH47526.1	HTR7 protein [Homo sapiens] >gi ...	72	2e-11	G
gi 10880131 ref NP_062874.1	5-hydroxytryptamine receptor 7...	72	2e-11	G
gi 10880129 ref NP_062873.1	5-hydroxytryptamine receptor 7...	72	2e-11	G
gi 55634399 ref XP_521556.1	PREDICTED: similar to 5-hydrox...	72	2e-11	
gi 6981018 ref NP_037196.1	hypocretin receptor 1 [Rattus n...	72	2e-11	G
gi 55664480 emb CAH69965.1	5-hydroxytryptamine (serotonin)...	72	2e-11	
gi 18597350 gb AAL76096.1	somatostatin receptor [Rattus no...	72	2e-11	G
gi 227114 prf 1614340A	dopamine receptor D1	72	2e-11	
gi 2119497 pir I51661	dopamine D1C receptor - African claw...	72	2e-11	
gi 4557639 ref NP_001517.1	orexin receptor 2 [Homo sapiens...	72	2e-11	G
gi 6840859 gb AAF28802.1	octopamine receptor [Aplysia kuro...	72	2e-11	
gi 435817 gb AAB28595.1	5-hydroxytryptamine receptor subty...	72	2e-11	
gi 6680329 ref NP_032341.1	5-hydroxytryptamine (serotonin)...	72	3e-11	G
gi 6981062 ref NP_037280.1	5-hydroxytryptamine (serotonin)...	72	3e-11	G
gi 55666937 ref XP_528711.1	PREDICTED: similar to D(1B) do...	72	3e-11	
gi 33329181 gb AAQ09991.1	mu opioid-like receptor [Rana pi...	72	3e-11	
gi 3941553 gb AAC82384.1	putative odorant receptor LOR12 [...]	72	3e-11	
gi 8885888 gb AAF80280.1	alpha 1b adrenoceptor [Oryctolagu...	72	3e-11	
gi 402163 gb AAA42134.1	5HT-7 serotonin receptor	71	4e-11	G
gi 477007 pir A47519	serotonin receptor 7 - rat >gi 410307...	71	4e-11	G
gi 34866769 ref XP_346803.1	hypothetical protein XP_346802...	71	4e-11	G
gi 45387607 ref NP_991152.1	opiate receptor-like [Danio re...	71	4e-11	G
gi 47522982 ref NP_999250.1	serotonin 5-hydroxytryptamine ...	71	4e-11	G
gi 50749576 ref XP_426518.1	PREDICTED: similar to dopamine...	71	4e-11	G
gi 449413 prf 1919247A	beta1 adrenergic receptor	71	4e-11	
gi 50110 emb CAA42966.1	beta-3-adrenergic-receptor [Mus mu...	71	5e-11	G
gi 7441613 pir S71323	alpha-1A adrenergic receptor - Japan...	71	5e-11	
gi 6678041 ref NP_033244.1	somatostatin receptor 3 [Mus mu...	71	5e-11	G
gi 298113 emb CAA51384.1	beta-3-adrenergic receptor [Mus m...	71	5e-11	G
gi 55630516 ref XP_519708.1	PREDICTED: similar to beta-3-a...	71	5e-11	
gi 32423757 gb AAF97249.2	mu opioid receptor [Macaca mulatta]	71	5e-11	
gi 7304871 ref NP_038490.1	adrenergic receptor, beta 3 [Mu...	71	5e-11	G
gi 52219136 ref NP_001004654.1	zgc:103757 [Danio rerio] >g...	71	5e-11	G
gi 50747427 ref XP_420871.1	PREDICTED: similar to alpha 1d...	71	5e-11	G
gi 1698952 gb AAB37322.1	high-affinity lysophosphatidic ac...	71	5e-11	
gi 47213181 emb CAF95370.1	unnamed protein product [Tetrao...	71	5e-11	
gi 47207357 emb CAF93600.1	unnamed protein product [Tetrao...	71	5e-11	
gi 1345417 dbj BAA09921.1	alpha1A-adrenoceptor [Oryzias la...	71	5e-11	
gi 31746495 gb AAP68900.1	type-three somatostatin receptor...	70	7e-11	
gi 12621102 ref NP_075227.1	5-hydroxytryptamine (serotonin)...	70	7e-11	G
gi 23379641 gb AAM76563.1	adrenergic receptor beta-3 [Gori...	70	7e-11	
gi 51869673 emb CAF31499.1	5-HT receptor 7a [Canis familia...	70	7e-11	G
gi 1857149 gb AAB48396.1	5-hydroxytryptamine7 receptor iso...	70	7e-11	G
gi 2133653 pir S68780	dopamine D1-like receptor - fruit fl...	70	9e-11	
gi 627342 pir A55044	beta-4C-adrenergic receptor - turkey ...	70	9e-11	
gi 6978459 ref NP_036833.1	adrenergic receptor, beta 1 [Ra...	70	9e-11	G
gi 34328059 ref NP_038488.1	adrenergic receptor, alpha 1d ...	70	9e-11	G

gi 23171234 gb AAF55030.2 	CG9652-PA [Drosophila melanogast...	70	9e-11	
gi 6981020 ref NP_037206.1 	hypocretin receptor 2 [Rattus n...	70	9e-11	
gi 6680327 ref NP_032340.1 	5-hydroxytryptamine (serotonin)...	70	9e-11	
gi 45382489 ref NP_990692.1 	Mel-1c melatonin receptor [Gal...	70	9e-11	
gi 6978463 ref NP_037240.1 	adrenergic receptor, beta 3 [Ra...	70	1e-10	
gi 220671 dbj BAA00527.1 	beta-1 adrenergic receptor [Rattu...	70	1e-10	
gi 2134105 pir I51666 	Mel-1c receptor subtype - African cl...	70	1e-10	
gi 241216 gb AAB20702.1 	beta 3-adrenergic receptor [Rattus...	70	1e-10	
gi 6680666 ref NP_031445.1 	adrenergic receptor, beta 1 [Mu...	70	1e-10	
gi 1857131 gb AAB48390.1 	Mel-1c(a) melatonin receptor [Xen...	70	1e-10	
gi 32482003 gb AAP84354.1 	somatostatin receptor 3 [Homo sa...	69	1e-10	
gi 55586759 ref XP_524646.1 	PREDICTED: similar to hypocret...	69	1e-10	
gi 21951818 gb AAM82355.1 	somatostatin receptor type 3 [Ca...	69	1e-10	
gi 23379645 gb AAM76565.1 	adrenergic receptor beta-3 [Sagu...	69	1e-10	
gi 23379639 gb AAM76562.1 	adrenergic receptor beta-3 [Pan ...	69	1e-10	
gi 50747348 ref XP_426351.1 	PREDICTED: similar to dopamine...	69	1e-10	
gi 46575616 gb AAH69171.1 	Putative neurotransmitter recepto...	69	1e-10	
gi 27695547 gb AAH42068.1 	Similar to somatostatin receptor...	69	1e-10	
gi 27676606 ref XP_218415.1 	similar to G protein-coupled r...	69	2e-10	
gi 51869675 emb CAF31500.1 	5-HT receptor 7b [Canis familia...	69	2e-10	
gi 202764 gb AAA63478.1 	alpha-1B adrenergic receptor	69	2e-10	
gi 54637595 gb EAL26997.1 	GA19956-PA [Drosophila pseudoobs...	69	2e-10	
gi 6120127 gb AAF04303.1 	beta-1 adrenergic receptor [Felis...	69	2e-10	
gi 14718772 gb AAK71884.1 	mu-opioid receptor [Macaca fasci...	69	2e-10	
gi 47211074 emb CAF89689.1 	unnamed protein product [Tetrao...	69	2e-10	
gi 1888505 gb AAB53098.1 	alpha 1d adrenoceptor [Oryctolagu...	69	2e-10	
gi 479128 emb CAA54451.1 	dopamine receptor [Drosophila mel...	69	2e-10	
gi 1103944 gb AAA83015.1 	5-hydroxytryptamine7 receptor >gi...	69	2e-10	
gi 55665067 emb CAH72100.1 	RP11-295F4.5 [Homo sapiens]	69	3e-10	
gi 28316758 ref NP_783599.1 	G protein-coupled receptor 4 [...	69	3e-10	
gi 345733 pir A45121 	alpha-1B adrenergic receptor - human	69	3e-10	
gi 109444 pir A40491 	alpha-1-adrenergic receptor - golden ...	69	3e-10	
gi 26335986 dbj BAC31691.1 	unnamed protein product [Mus mu...	69	3e-10	
gi 4501959 ref NP_000670.1 	alpha-1B-adrenergic receptor [H...	69	3e-10	
gi 47575853 ref NP_058687.2 	adrenergic receptor, alpha 1b ...	69	3e-10	
gi 13324696 ref NP_077809.1 	adrenergic receptor, alpha 1d ...	69	3e-10	
gi 27371132 gb AAH37002.1 	Adralb protein [Mus musculus]	69	3e-10	
gi 34368416 emb CAE46112.1 	alpha-1B adrenergic receptor [S...	69	3e-10	
gi 47213375 emb CAF90994.1 	unnamed protein product [Tetrao...	69	3e-10	
gi 666891 gb AAB59485.1 	alpha-1B adrenergic receptor >gi 1...	69	3e-10	
gi 547221 gb AAB31164.1 	alpha adrenergic receptor subtype ...	69	3e-10	
gi 543734 sp P15823 A1AB RAT	Alpha-1B adrenergic receptor (...)	69	3e-10	
gi 37723880 gb AAO03563.1 	somatostatin receptor subtype 3 ...	68	3e-10	
gi 38112417 gb AAR11294.1 	orexin receptor type-2a [Mus mus...	68	3e-10	
gi 38112416 gb AAR11293.1 	orexin receptor type-2b [Mus mus...	68	3e-10	
gi 27806037 ref NP_776833.1 	opioid receptor, mu 1 [Bos tau...	68	3e-10	
gi 1857135 gb AAB48392.1 	Mel-1c(b) melatonin receptor [Xen...	68	3e-10	
gi 3954976 emb CAA06542.1 	dopamine D1x receptor [Myxine gl...	68	3e-10	
gi 20139232 sp Q9MYW9 OPRM MACMU	Mu-type opioid receptor (M...	68	3e-10	
gi 7690135 gb AAB31163.2 	alpha adrenergic receptor subtype...	68	4e-10	
gi 86790 pir JH0447 	alpha-1A-adrenergic receptor - human >....	68	4e-10	
gi 86529 pir A25896 	beta-adrenergic receptor - turkey >gi ...	68	4e-10	
gi 4501957 ref NP_000669.1 	alpha-1D-adrenergic receptor [H...	68	4e-10	
gi 13027456 ref NP_076482.1 	orphan G protein-coupled recep...	68	4e-10	
gi 27446646 gb AAK74189.1 	mu opioid receptor variant MOR-1...	68	4e-10	
gi 4588548 gb AAD26148.1 	beta 3 adrenergic receptor; beta3...	68	4e-10	
gi 2661769 emb CAA73841.1 	dopamine receptor, D1 [Apis mell...	68	4e-10	
gi 11128469 emb CAC15482.1 	dJ366F13.1 (opioid receptor mu ...	67	6e-10	
gi 38156309 gb AAR12887.1 	mu opioid receptor variant MOR-1...	67	6e-10	

gi 4501961 ref NP_000671.1	alpha-1A-adrenergic receptor is...	67	6e-10	G
gi 50959650 gb AAH74927.1	Opioid receptor, mu 1 [Homo sapi...	67	6e-10	G
gi 37362413 gb AAQ91331.1	adrenergic alpha 1A receptor [Ho...	67	6e-10	G
gi 37729014 gb AAO03562.1	somatostatin receptor subtype 4 ...	67	6e-10	G
gi 7300871 gb AAF56012.1	CG6919-PA [Drosophila melanogaste...	67	6e-10	G
gi 15451761 ref NP_150647.1	alpha-1A-adrenergic receptor i...	67	6e-10	B
gi 15451759 ref NP_150646.1	alpha-1A-adrenergic receptor i...	67	6e-10	B
gi 15451757 ref NP_150645.1	alpha-1A-adrenergic receptor i...	67	6e-10	G
gi 34850746 ref NP_919242.1	adrenergic, beta-1-, receptor ...	67	6e-10	G
gi 48374069 ref NP_001001538.1	mu opioid receptor [Sus scr...	67	6e-10	G
gi 50801488 ref XP_428541.1	PREDICTED: similar to beta-4C...	67	6e-10	G
gi 50759565 ref XP_425762.1	PREDICTED: similar to alpha-1A...	67	6e-10	G
gi 50737619 ref XP_426087.1	PREDICTED: similar to opioid r...	67	6e-10	G
gi 27446648 gb AAK74190.1	mu opioid receptor variant MOR-1...	67	6e-10	G
gi 27373028 gb AAN87342.1	DRG kappa 1 splice variant KOR 1...	67	6e-10	G
gi 47217452 emb CAG10221.1	unnamed protein product [Tetrao...	67	6e-10	
gi 607912 gb AAB60354.1	mu opioid receptor variant >gi 213...	67	6e-10	G
gi 666893 gb AAB59486.1	alpha-1C-adrenergic receptor	67	6e-10	G
gi 6114881 emb CAB59347.1	alpha-1D adrenergic receptor [Su...	67	6e-10	
gi 547222 gb AAB31165.1	alpha adrenergic receptor subtype ...	67	6e-10	
gi 1362719 pir B55886	dopamine receptor D1B - chicken	67	6e-10	
gi 40362763 gb AAR84650.1	alpha 1A adrenoceptor isoform 6 ...	67	6e-10	
gi 40362761 gb AAR84649.1	alpha 1A adrenoceptor isoform 5b...	67	6e-10	
gi 40362757 gb AAR84647.1	alpha 1A adrenoceptor isoform 3c...	67	6e-10	G
gi 40362755 gb AAR84646.1	alpha 1A adrenoceptor isoform 3b...	67	6e-10	G
gi 40362753 gb AAR84645.1	alpha 1A adrenoceptor isoform 2c...	67	6e-10	G
gi 12858052 dbj BAB31185.1	unnamed protein product [Mus mu...	67	6e-10	G
gi 55558 emb CAA35934.1	unnamed protein product [Rattus no...	67	7e-10	B
gi 111409 pir S12591	beta-1-adrenergic receptor - rat	67	7e-10	
gi 111359 pir A38731	alpha-1A adrenergic receptor - rat >gi ...	67	7e-10	G
gi 28460708 ref NP_783178.1	trace amine receptor 9 [Rattus ...	67	7e-10	B
gi 2143857 pir I56517	mu opioid receptor - rat >gi 403574 ...	67	7e-10	G
gi 4505515 ref NP_000905.1	opioid receptor, mu 1 [Homo sap...	67	7e-10	G
gi 32186858 gb AAP72174.1	somatostatin receptor 1 [Canis f...	67	7e-10	G
gi 38016137 ref NP_937822.1	G protein-coupled receptor 103...	67	7e-10	G
gi 12231866 gb AAG49292.1	5-hydroxytryptamine 7 receptor [...	67	7e-10	
gi 47117904 sp Q96P65 QRFR_HUMAN	Orexigenic neuropeptide QR...	67	7e-10	B
gi 27261706 gb AAN86027.1	mu-opioid receptor [Cavia porcel...	67	7e-10	
gi 404116 dbj BAA04109.1	kappa opioid receptor [Rattus nor...	67	1e-09	G
gi 1083836 pir A55259	kappa opioid receptor - guinea pig >...	67	1e-09	
gi 425189 gb AAA41496.1	kappa opioid receptor	67	1e-09	G
gi 1204095 emb CAA56457.1	dopamine receptor [Takifugu rubr...	67	1e-09	
gi 34866003 ref XP_346733.1	hypothetical protein XP_346732...	67	1e-09	G
gi 6981310 ref NP_037203.1	opioid receptor, mu 1 [Rattus n...	67	1e-09	G
gi 35187403 gb AAQ84306.1	type 7 serotonin receptor [Helis...	67	1e-09	
gi 12232632 gb AAD22540.2	alpha-1A adrenergic receptor [Ca...	67	1e-09	
gi 37625043 gb AAQ95734.1	dopamine receptor D4 [Mustela pu...	67	1e-09	
gi 47217312 emb CAG12520.1	unnamed protein product [Tetrao...	67	1e-09	
gi 1657822 gb AAB93648.1	beta1 adrenergic receptor [Canis ...	67	1e-09	
gi 2143855 pir I56504	mu opioid receptor - rat >gi 1017732...	67	1e-09	G
gi 241214 gb AAB20701.1	alpha 1-adrenergic receptor subtyp...	66	1e-09	
gi 885865 gb AAA86878.1	mu opioid receptor	66	1e-09	G
gi 28212244 ref NP_783177.1	trace amine receptor 6 [Rattus ...	66	1e-09	G
gi 39725940 ref NP_000903.2	opioid receptor, kappa 1 [Homo ...	66	1e-09	G
gi 37724703 gb AAO18365.1	mu opioid receptor variant CII [...	66	1e-09	G
gi 6754940 ref NP_035143.1	opioid receptor, mu 1 [Mus musc...	66	1e-09	G
gi 4505925 ref NP_003958.1	putative neurotransmitter recep...	66	1e-09	G
gi 565069 gb AAB60673.1	mu opioid receptor [Mus musculus] ...	66	1e-09	G

gi 8778198 gb AAF79213.1 	mu opioid receptor variant F [Mus musculus]	66	1e-09	
gi 18026695 gb AAL55583.1 	mu opioid receptor variant BII [Mus musculus]	66	1e-09	
gi 18026693 gb AAL55582.1 	mu opioid receptor variant BI [Mus musculus]	66	1e-09	
gi 18026691 gb AAL55581.1 	mu opioid receptor variant A [Mus musculus]	66	1e-09	
gi 5853309 gb AAD54415.1 	mu opioid receptor variant C; MOR-1 [Mus musculus]	66	1e-09	
gi 45768619 gb AAH67468.1 	G protein-coupled receptor 63 [Homo sapiens]	66	1e-09	
gi 20379020 gb AAM21070.1 	opioid receptor kappa [Homo sapiens]	66	1e-09	
gi 27448127 gb AAO13794.1 	mu opioid receptor variant R [Mus musculus]	66	1e-09	
gi 27448125 gb AAO13793.1 	mu opioid receptor variant Q [Mus musculus]	66	1e-09	
gi 27448123 gb AAO13792.1 	mu opioid receptor variant P [Mus musculus]	66	1e-09	
gi 27446644 gb AAK74188.1 	mu opioid receptor variant MOR-1 [Mus musculus]	66	1e-09	
gi 1256416 gb AAA96315.1 	beta3-adrenergic receptor [Cavia porcellus]	66	1e-09	
gi 5805153 gb AAD51861.1 	mu opioid receptor MOR1D [Mus musculus]	66	1e-09	
gi 3650454 gb AAC61296.1 	octopamine receptor type 1 [Lymnaea stagnalis]	66	1e-09	
gi 409029 gb AAA93114.1 	alpha1C adrenergic receptor	66	1e-09	
gi 26332529 dbj BAC29982.1 	unnamed protein product [Mus musculus]	66	1e-09	
gi 22832515 gb AAF48875.2 	CG6857-PA [Drosophila melanogaster]	66	2e-09	
gi 15004694 gb AAK77197.1 	adrenergic receptor alpha-1a [Homo sapiens]	66	2e-09	
gi 47225323 emb CAG09823.1 	unnamed protein product [Tetraodon nigroviridis]	66	2e-09	
gi 47213874 emb CAF94024.1 	unnamed protein product [Tetraodon nigroviridis]	66	2e-09	
gi 47205254 emb CAF95660.1 	unnamed protein product [Tetraodon nigroviridis]	66	2e-09	
gi 47178862 emb CAG13901.1 	unnamed protein product [Tetraodon nigroviridis]	66	2e-09	
gi 32165520 gb AAP72127.1 	G protein-coupled receptor 135 [Danio rerio]	65	2e-09	
gi 395368 emb CAA49352.1 	serotonin receptor [Rattus norvegicus]	65	2e-09	
gi 1002739 gb AAC50504.1 	GPR10	65	2e-09	
gi 55250889 gb AAH85587.1 	Zgc:103685 [Danio rerio] >gi 559...	65	2e-09	
gi 54111955 gb AAV28689.1 	mu opioid receptor [Taricha granulosa]	65	2e-09	
gi 52698314 gb AAR36861.1 	melanopsin [Felis catus]	65	2e-09	
gi 48101556 ref XP_392683.1 	similar to CG4322-PA [Apis mellifera]	65	2e-09	
gi 2796173 gb AAB97525.1 	beta-1 adrenergic receptor [Sus scrofa]	65	2e-09	
gi 2398857 dbj BAA22217.1 	Gq-coupled rhodopsin [Mizuhopecten yessoensis]	65	2e-09	
gi 24111248 ref NP_035141.1 	opioid receptor, kappa 1 [Mus musculus]	65	3e-09	
gi 30231226 ref NP_840074.1 	opsin 4 (melanopsin) [Danio rerio]	65	3e-09	
gi 51951314 gb AAU15126.1 	kappa opioid receptor [Taricha granulosa]	65	3e-09	
gi 54642851 gb EAL31595.1 	GA16412-PA [Drosophila pseudoobscura]	65	3e-09	
gi 47222483 emb CAG13003.1 	unnamed protein product [Tetraodon nigroviridis]	65	3e-09	
gi 944892 gb AAB60369.1 	dopamine D2 receptor >gi 1706283 s...	65	3e-09	
gi 478273 pir JC1525 	alpha-1B-adrenergic receptor - rat >gi 1706283 s...	65	4e-09	
gi 18859151 ref NP_571782.1 	opioid receptor, mu 1 [Danio rerio]	65	4e-09	
gi 27806213 ref NP_776923.1 	adrenergic, alpha 1A, receptor	65	4e-09	
gi 50729258 ref XP_425480.1 	PREDICTED: similar to Somatostatin receptor 2 [Danio rerio]	65	4e-09	
gi 47227683 emb CAG09680.1 	unnamed protein product [Tetraodon nigroviridis]	65	4e-09	
gi 6563386 emb CAB62570.1 	alpha-1A adrenergic receptor [Sus scrofa]	65	4e-09	
gi 1438750 gb AAB36304.1 	beta 1-adrenergic receptor [Ovis canadensis]	65	4e-09	
gi 21928413 dbj BAC05800.1 	seven transmembrane helix receptor	65	4e-09	
gi 50749927 ref XP_426540.1 	PREDICTED: similar to beta-adrenergic receptor [Danio rerio]	64	5e-09	
gi 45708982 gb AAH67455.1 	G protein-coupled receptor 45 [Homo sapiens]	64	5e-09	
gi 55627426 ref XP_527507.1 	PREDICTED: similar to Putative G protein-coupled receptor 45 [Danio rerio]	64	6e-09	
gi 20070983 gb AAH26357.1 	G protein-coupled receptor 62 [Homo sapiens]	64	6e-09	
gi 3242941 gb AAC23861.1 	alpha-1A adrenoreceptor [Canis familiaris]	64	6e-09	
gi 2198745 gb AAB61334.1 	alpha 1a-adrenoceptor [Oryctolagus cuniculus]	64	6e-09	
gi 8843927 gb AAF80169.1 	alpha 1a-adrenoceptor isoform 3 [Danio rerio]	64	6e-09	
gi 8843925 gb AAF80168.1 	alpha 1a-adrenoceptor isoform 2 [Danio rerio]	64	6e-09	
gi 51765584 ref XP_487102.1 	PREDICTED: similar to trace amine-associated receptor 1 [Danio rerio]	64	8e-09	
gi 31083315 ref NP_009158.3 	G protein-coupled receptor 45 [Danio rerio]	64	8e-09	
gi 37524029 gb AAQ92315.1 	relaxin-3 receptor-1 [Homo sapiens]	64	8e-09	
gi 31542909 ref NP_444337.2 	G protein-coupled receptor 45 [Danio rerio]	64	8e-09	
gi 55624572 ref XP_526961.1 	PREDICTED: G-protein coupled receptor 45 [Danio rerio]	64	8e-09	
gi 55599359 ref XP_515672.1 	PREDICTED: similar to G protein-coupled receptor 45 [Danio rerio]	64	8e-09	
gi 33859500 ref NP_033760.1 	adenosine A2a receptor [Mus musculus]	64	8e-09	

gi 34878896 ref NP_543141.2	G protein-coupled receptor 62	64	8e-09	
gi 23452342 gb AAN33001.1	adenosine-like receptor [Asterin...]	64	8e-09	
gi 11993046 gb AAG42572.1	G protein-coupled receptor PSP24	64	8e-09	
gi 47226910 emb CAG05802.1	unnamed protein product [Tetrao...]	64	8e-09	
gi 2119488 pir I50081	rhodopsin - green anole >gi 468262 g...	63	1e-08	
gi 13540557 ref NP_110411.1	G protein-coupled receptor 63	63	1e-08	
gi 27683113 ref XP_237112.1	similar to G protein-coupled r...	63	1e-08	
gi 6753710 ref NP_034228.1	opsin (encephalopsin) [Mus musc...]	63	1e-08	
gi 37497118 ref NP_922917.1	dopamine receptor D2 like [Dan...	63	1e-08	
gi 41386782 ref NP_776656.1	adrenergic, beta-2, receptor, ...	63	1e-08	
gi 50742751 ref XP_419740.1	PREDICTED: similar to Vascular...	63	1e-08	
gi 45768489 gb AAH67466.1	G protein-coupled receptor 63 [H...	63	1e-08	
gi 7271779 gb AAF44619.1	rod-like opsin [Salmo salar]	63	1e-08	
gi 6017883 gb AAF01674.1	beta 1 adrenergic receptor [Bos t...	63	1e-08	
gi 24432089 ref NP_006047.2	neuromedin U receptor 1 [Homo ...]	63	1e-08	
gi 4028154 gb AAC96118.1	putative neurotransmitter recepto...	63	1e-08	
gi 51765586 ref XP_487103.1	PREDICTED: similar to trace am...	62	2e-08	
gi 2865470 gb AAC02680.1	orphan G protein-coupled receptor...	62	2e-08	
gi 30354034 gb AAH51914.1	NMUR1 protein [Homo sapiens] >gi...	62	2e-08	
gi 33504559 ref NP_878306.1	opioid receptor, kappa 1 [Dani...	62	2e-08	
gi 45767693 gb AAH67467.1	G protein-coupled receptor 63 [H...	62	2e-08	
gi 22091559 emb CAD23111.1	blue cone opsin [Cottus gobio]	62	2e-08	
gi 4455063 gb AAD21056.1	orphan G protein-coupled receptor...	62	2e-08	
gi 2735351 gb AAB93884.1	high-affinity lysophosphatidic ac...	62	2e-08	
gi 71928 pir OOOCG	rhodopsin - giant octopus	62	2e-08	
gi 2695874 emb CAB08107.1	P2Y-like G-protein coupled recep...	62	2e-08	
gi 808876 dbj BAA06508.1	kappa-opioid receptor [Mus muscul...	62	2e-08	
gi 345542 pir B45229	opsin, green-sensitive (clone GFgr-2)...	62	2e-08	
gi 4885301 ref NP_005282.1	G protein-coupled receptor 17 [...]	62	2e-08	
gi 55742652 ref NP_999323.1	5-HT1D receptor [Sus scrofa] >...	62	2e-08	
gi 38016150 ref NP_937842.1	G protein-coupled receptor 103...	62	2e-08	
gi 38016146 ref NP_937835.1	G protein-coupled receptor 103...	62	2e-08	
gi 18859537 ref NP_571661.1	vertebrate ancient long opsin ...	62	2e-08	
gi 21307817 gb AAL25619.1	orphan G protein-coupled recepto...	62	2e-08	
gi 51860765 gb AAU11506.1	melanopsin [Phodopus sungorus]	62	2e-08	
gi 14041800 dbj BAB55447.1	G protein-coupled receptor [Rat...]	62	2e-08	
gi 47206009 emb CAF91280.1	unnamed protein product [Tetrao...]	62	2e-08	
gi 47205825 emb CAF95884.1	unnamed protein product [Tetrao...]	62	2e-08	
gi 9823 emb CAA30644.1	rhodopsin [Octopus dofleini] >gi 12...	62	2e-08	
gi 25025009 ref XP_204521.1	PREDICTED: similar to trace am...	62	3e-08	
gi 21594966 gb AAH31653.1	GPR17 protein [Homo sapiens]	62	3e-08	
gi 33622376 gb AAO38857.1	melanopsin [Rutilus rutilus]	62	3e-08	
gi 28212246 ref NP_783180.1	trace amine receptor 14 [Rattu...]	62	3e-08	
gi 50749504 ref XP_421666.1	PREDICTED: similar to serotonin...	62	3e-08	
gi 1154643 emb CAA64210.1	serotonin receptor 1D [Cavia por...	62	3e-08	
gi 47215888 emb CAG12280.1	unnamed protein product [Tetrao...]	62	3e-08	
gi 39591067 emb CAE58847.1	Hypothetical protein CBG02068 [...]	62	3e-08	
gi 22477850 gb AAH36773.1	Opsin 3 (encephalopsin, panopsin...)	61	4e-08	
gi 45445826 gb AAN11677.2	CG13702-PB [Drosophila melanogas...]	61	4e-08	
gi 31203627 ref XP_310762.1	ENSANGP00000015565 [Anopheles ...]	61	4e-08	
gi 55620557 ref XP_526207.1	PREDICTED: similar to G protei...	61	4e-08	
gi 7657071 ref NP_055137.1	opsin 3 (encephalopsin, panopsi...)	61	4e-08	
gi 32483397 ref NP_000788.2	dopamine receptor D4 [Homo sapi...]	61	4e-08	
gi 17223726 gb AAL02125.1	allatostatin C/drostatin C recep...	61	4e-08	
gi 291946 gb AAB59386.1	dopamine receptor D4 [Homo sapiens...]	61	4e-08	
gi 4325156 gb AAD17289.1	dopamine receptor D4-2 [synthetic...]	61	4e-08	
gi 18077928 gb AAL58637.1	Dopamine D4 receptor [Homo sapiens]	61	4e-08	
gi 21928798 dbj BAC05985.1	seven transmembrane helix recep...	61	4e-08	
gi 54641635 gb EAL30385.1	GA20386-PA [Drosophila pseudoobs...]	61	4e-08	
gi 47230682 emb CAF99875.1	unnamed protein product [Tetrao...]	61	4e-08	

gi 47229610 emb CAG06806.1	unnamed protein product [Tetrao...]	61	4e-08	
gi 47223619 emb CAF99228.1	unnamed protein product [Tetrao...]	61	4e-08	
gi 47206414 emb CAF91545.1	unnamed protein product [Tetrao...]	61	4e-08	
gi 7296517 gb AAF51802.1	CG7485-PA [Drosophila melanogaste...]	61	5e-08	G
gi 4758474 ref NP_004239.1	G protein-coupled receptor 10 [...]	61	5e-08	G
gi 27714145 ref XP_232847.1	similar to G protein-coupled r...	61	5e-08	
gi 29570497 gb AAO91736.1	Dopamine receptor protein 1, iso...	61	5e-08	
gi 8272568 gb AAF74260.1	VA opsin [Cyprinus carpio]	61	5e-08	
gi 4028153 gb AAC96117.1	putative neurotransmitter recepto...	61	5e-08	
gi 47210163 emb CAF95187.1	unnamed protein product [Tetrao...]	61	5e-08	
gi 47210162 emb CAF95186.1	unnamed protein product [Tetrao...]	61	5e-08	
gi 47191525 emb CAF94841.1	unnamed protein product [Tetrao...]	61	5e-08	
gi 85086 pir JH0170	octopamine receptor type I - fruit fly...	61	5e-08	
gi 103504 pir S12004	tyramine receptor - fruit fly (Drosop...	61	5e-08	
gi 27685687 ref XP_220097.1	similar to G protein-coupled r...	60	7e-08	G
gi 55664453 emb CAH73066.1	G protein-coupled receptor 10 [...]	60	7e-08	
gi 38045882 gb AAR08905.1	nociceptin-like receptor [Rana p...	60	7e-08	
gi 22831755 gb AAF46059.2	CG3171-PA [Drosophila melanogast...	60	7e-08	G
gi 55627624 ref XP_527542.1	PREDICTED: opioid receptor, mu...	60	7e-08	
gi 31542912 ref NP_109658.2	G protein-coupled receptor PSP...	60	7e-08	G
gi 992582 dbj BAA07741.1	G protein-coupled seven-transmemb...	60	7e-08	
gi 47220968 emb CAF98197.1	unnamed protein product [Tetrao...]	60	7e-08	
gi 11993048 gb AAG42573.1	G protein-coupled receptor PSP24...	60	7e-08	G
gi 639573 gb AAB30835.1	alpha 1c-adrenoceptor, alpha 1c-AR...	60	7e-08	
gi 1122223 dbj BAA06806.1	alpha 1B adrenergic receptor [Ra...	60	7e-08	G
gi 7707679 dbj BAA95353.1	trehalose receptor 1 [Drosophila...]	60	7e-08	

Alignments

Get selected sequences Select all Deselect all

>gi|37183331|gb|AAQ89465.1| G GPR78 [Homo sapiens]
 gi|36951034|ref|NP_543009.2| B G protein-coupled receptor 78 [Homo sapiens]
 gi|47480897|gb|AAH69813.1| B G protein-coupled receptor 78 [Homo sapiens]
 gi|47479613|gb|AAH69343.1| B G protein-coupled receptor 78 [Homo sapiens]
 gi|34784705|gb|AAH57778.1| B G protein-coupled receptor 78 [Homo sapiens]
 gi|46397876|sp|Q96P69|GP78 HUMAN G Probable G protein-coupled receptor GPR78 (UNQ5925/PRO19818
 gi|21928620|dbj|BAC05898.1| B seven transmembrane helix receptor [Homo sapiens]
 Length = 363

Score = 720 bits (1858), Expect = 0.0
 Identities = 363/363 (100%), Positives = 363/363 (100%)

Query: 1 MGPGEALLAGLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAAALDM 60
 MGPGEALLAGLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAAALDM
 Sbjct: 1 MGPGEALLAGLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAAALDM 60

Query: 61 PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAAALSVAALSADQWLAvgFPLRYAGRLRP 120
 PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAAALSVAALSADQWLAvgFPLRYAGRLRP
 Sbjct: 61 PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAAALSVAALSADQWLAvgFPLRYAGRLRP 120

Query: 121 RYAGLLLGCACWGQSLSAFSGAALGCSWLGYSASFASCRLPPEPERPRFAAFTATLHAVG 180
 RYAGLLLGCACWGQSLSAFSGAALGCSWLGYSASFASCRLPPEPERPRFAAFTATLHAVG
 Sbjct: 121 RYAGLLLGCACWGQSLSAFSGAALGCSWLGYSASFASCRLPPEPERPRFAAFTATLHAVG 180

Query: 181 FVLPLAVLCLTSQLVHRVARRHQCQMDTVMKALALLADLHPSPVRQRCLIQQKRRRRHAT 240
 FVLPLAVLCLTSQLVHRVARRHQCQMDTVMKALALLADLHPSPVRQRCLIQQKRRRRHAT
 Sbjct: 181 FVLPLAVLCLTSQLVHRVARRHQCQMDTVMKALALLADLHPSPVRQRCLIQQKRRRRHAT 240

Query: 241 RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP 300
 RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP
 Sbjct: 241 RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP 300

Query: 301 FRQVLAGMVHRLLKRTPPASTHDSSLVDAGMVHQLLKRTPPASTHNGSVDTENDSCLQ 360
 FRQVLAGMVHRLLKRTPPASTHDSSLVDAGMVHQLLKRTPPASTHNGSVDTENDSCLQ

Sbjct: 301 FRQVLAGMVHRLLKRTPRPASTHDSSLVDAGMVHQLLKRTPRPASTHNGSVDTENDSCLQ 360
 Query: 361 QTH 363
 QTH
 Sbjct: 361 QTH 363

[>] >gi|16566319|gb|AAL26479.1| G G protein-coupled receptor [Homo sapiens]
 Length = 363

Score = 714 bits (1843), Expect = 0.0
 Identities = 360/363 (99%), Positives = 361/363 (99%)

Query: 1 MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLAAALDM 60
 MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLAAALDM
 Sbjct: 1 MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLAAALDM 60
 Query: 61 PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP 120
 PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP
 Sbjct: 61 PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP 120
 Query: 121 RYAGLLLGCAGWQSLAFSGAACGCSWLGYSASFACSLRLPPEPERPRFAAFTATLHAVG 180
 RYAGLLLGCAGWQSLAFSGAACGCSWLGYSASFACSLRLPPEPERPRFAAFTATLHAVG
 Sbjct: 121 RYAGLLLGCAGWQSLAFSGAACGCSWLGYSASFACSLRLPPEPERPRFAAFTATLHAVG 180
 Query: 181 FVLPLAVLCLTSQVHRVARRHQRMDTVMKALALLADLHPSPVRQRCLIQQKRRRRHAT 240
 FVLPLAVLCLTSQVHRVARRHQRMDTVMKALA+LADLHPSPVRQRCLIQQKRRRRHAT
 Sbjct: 181 FVLPLAVLCLTSQVHRVARRHQRMDTVMKALAVLADLHPSPVRHGCLIQQKRRRRHAT 240
 Query: 241 RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP 300
 RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP
 Sbjct: 241 RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP 300
 Query: 301 FRQVLAGMVHRLLKRTPRPASTHDSSLVDAGMVHQLLKRTPRPASTHNGSVDTENDSCLQ 360
 FRQVLAGMVHRLLKRTPRPASTHDSSLVDAGMVHQLLKRTPRPASTHNGSVDTENDSCLQ
 Sbjct: 301 FRQVLAGMVHRLLKRTPRPASTHDSSLVDAGMVHQLLKRTPRPASTHNGSVDTENDSCLQ 360
 Query: 361 QTH 363
 QTH
 Sbjct: 361 QTH 363

[>] >gi|55622242|ref|XP_526521.1| PREDICTED: similar to G protein-coupled receptor 78 [Pan troglodytes]
 Length = 508

Score = 435 bits (1118), Expect = e-120
 Identities = 224/245 (91%), Positives = 227/245 (92%)

Query: 1 MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLAAALDM 60
 MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLAAALDM
 Sbjct: 1 MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLAAALDM 60
 Query: 61 PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP 120
 PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP
 Sbjct: 61 PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP 120
 Query: 121 RYAGLLLGCAGWQSLAFSGAACGCSWLGYSASFACSLRLPPEPERPRFAAFTATLHAVG 180
 RYAGLLLGCAGWQSLAFSGAACGCSWLGYSASFACSLRLPPEPERPRFAAFTATLHAVG
 Sbjct: 121 RYAGLLLGCAGWQSLAFSGAACGCSWLGYSASFACSLRLPPEPERPRFAAFTATLHAVG 180
 Query: 181 FVLPLAVLCLTSQVHRVARRHQRMDTVMKALALLADLHPSPVRQRCLIQQKRRRRHAT 240
 F LPLAVLCLTSQVHRVAR RHQRMDTVMKALALLADLHP Q + R A
 Sbjct: 181 FALPLAVLCLTSQVHRVARSHCQRMDTVMKALALLADLHPRYWPSACRQAQARDLGAP 240
 Query: 241 RKIGI 245
 +G+
 Sbjct: 241 WAVGL 245

Score = 283 bits (725), Expect = 4e-75
 Identities = 148/176 (84%), Positives = 151/176 (85%), Gaps = 7/176 (3%)

Query: 189 CLTSILQVHRVARRHCQRMDTVTMKALALLADLHP-SVRQRCLIQQQKRRRRHATRKIGIAI 247
 CL SLQ C A+ L L P SVRQRCLIQQQKRRRRHATRKIGIAI
 Sbjct: 339 CLPLSLQPLGSGPGFCPH-----PAIILTTVLCPHSVRQRCLIQQQKRRRRHATRKIGIAI 392

Query: 248 ATFLICFAPYVMTRLAELVPFVTVNQWGLSKCLTYSKAVADPFTYSLRRPFRQVLAG 307
 ATFLICFAPYVMTRLAELVPF+T+NAQWGLSKCLTYSKA ADPFTYSLRRPFRQVLAG
 Sbjct: 393 ATFLICFAPYVMTRLAELVPFITLNAQWGLSKCLTYSKAAADPFTYSLRRPFRQVLAG 452

Query: 308 MVHRLLKRTPRPASTHDSSLVDAGMVHQQLLKRTPRPASTHNGSVDENDSCLQQTH 363
 MVHRLLKRTPRPASTHDSSLVDAGMVHQQLLKRTPRPASTHNGSVDENDSCLQQTH
 Sbjct: 453 MVHRLLKRTPRPASTHDSSLVDAGMVHQQLLKRTPRPASTHNGSVDENDSCLQQTH 508

>gi|50747354|ref|XP_426354.1| **G** PREDICTED: similar to G protein-coupled receptor 26 [Gallus
 Length = 416

Score = 347 bits (890), Expect = 3e-94
 Identities = 170/299 (56%), Positives = 222/299 (74%)

Query: 7 LLAGLLVMVLAVALLSNALVLLCCAYSaelrtrasmgvllvnlslgħlllaaldmpftllg 66
 LIA LLV+VL V+LLSN LVLLC YS E+R + +GV LVNLS +LLL L+MPFTLLG
 Sbjct: 7 LLALLLVLVLVSVSLLSNLLVLLCFVYSTEIRKQVAGVFLVNLSFCNLLLTILNMPFTLLG 66

Query: 67 VMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRPRYAGLL 126
 ++R + P C+ +GFL+TFL SN LS+AALS D+W+AV FPL Y ++R + A +L
 Sbjct: 67 ILRNQQPLGGCICKAVGFLETFLTSNTMSMAALSIDKWIAVVFPPLSYTSKMRYKDAVIL 126

Query: 127 LGCAWGQSLAFSGAALGCSWLGYSSAFASCSDLRPPPEPERPRFAAFTATLHAVGFVLPLA 186
 +G +W SL F +L SW+ Y+S +ASC+L L E ER RF FT H+ F+L L
 Sbjct: 127 MGYSWLSLTFPLVSLFYSWDYNVYASCTLHLKEETERRRFTVFTIVFHSTSFMLSLV 186

Query: 187 VLCLTSLQVHRVARRHCQRMDTVTMKALALLADLHP-SVRQRCLIQQQKRRRRHATRKIGIA 246
 +LC T L+V +VAR HC+R+D +TM+ L LL D+HPSV+QRCL +QKRR RAT+KI I
 Sbjct: 187 ILCFTYLVKLKVARFHCKRIDIITMQLVLLVDIHPSVKQRCLNEQKRRQRATKKISIF 246

Query: 247 IATFLICFAPYVMTRLAELVPFVTVNQWGLSKCLTYSKAVADPFTYSLRRPFRQVL 305
 I +F+ICF PY+++TRL EL+PFVT+N WGI+SKCLTYSKA +DPF YSLLR+ +++VL
 Sbjct: 247 IGSFVICFGPYIITRLIELLPFVTINYYWGIISKCLTYSKAASDPFVYSLLRQQYKKVL 305

>gi|23592220|ref|NP_703143.1| **G** G protein-coupled receptor 26 [Homo sapiens]

gi|22293641|emb|CAD44281.1| **G** putative orphan G protein-coupled receptor 26 [Homo sapiens]

gi|37537804|sp|Q8NDV2|GP26_HUMAN **G** Probable G protein-coupled receptor 26
 Length = 337

Score = 330 bits (845), Expect = 5e-89
 Identities = 170/327 (51%), Positives = 222/327 (67%), Gaps = 4/327 (1%)

Query: 1 MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSaelrtrasmgvllvnlslgħlllaaldm 60
 M +A LAGLLV + V+LLSNLVLLC +SA++R +A + +NL+ G+LL ++M
 Sbjct: 1 MNWDAGLAGLVLGVMTGVSLLSNALVLLCLLHSADIRRQAPALFTLNLCGNLLCTVNM 60

Query: 61 PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSADQWLAVGFPLRYAGRLRP 120
 P TL GV+ R P+ C++ FLDTFLA+N+ LS+AALS D+W+AV FPL Y ++R
 Sbjct: 61 PLTLAGVVAQRQPAGDRICRLAAFLDTFLAANSMLSMAALSIDRWVAVVFPLSYRAKMRL 120

Query: 121 RYAGLLLGCAGQSLAFSGAALGCSWLGYSSAFASCSDLRPPPEPERPRFAAFTATLHAVG 180
 R A L++ W +L F AAL SWLG+ +ASC+L ER RFA FT HA+
 Sbjct: 121 RDAALMVAYTWLHALTFPAAALALSWLGFHQLYASCTLCSRRPDERLRFAVFTGAFHALS 180